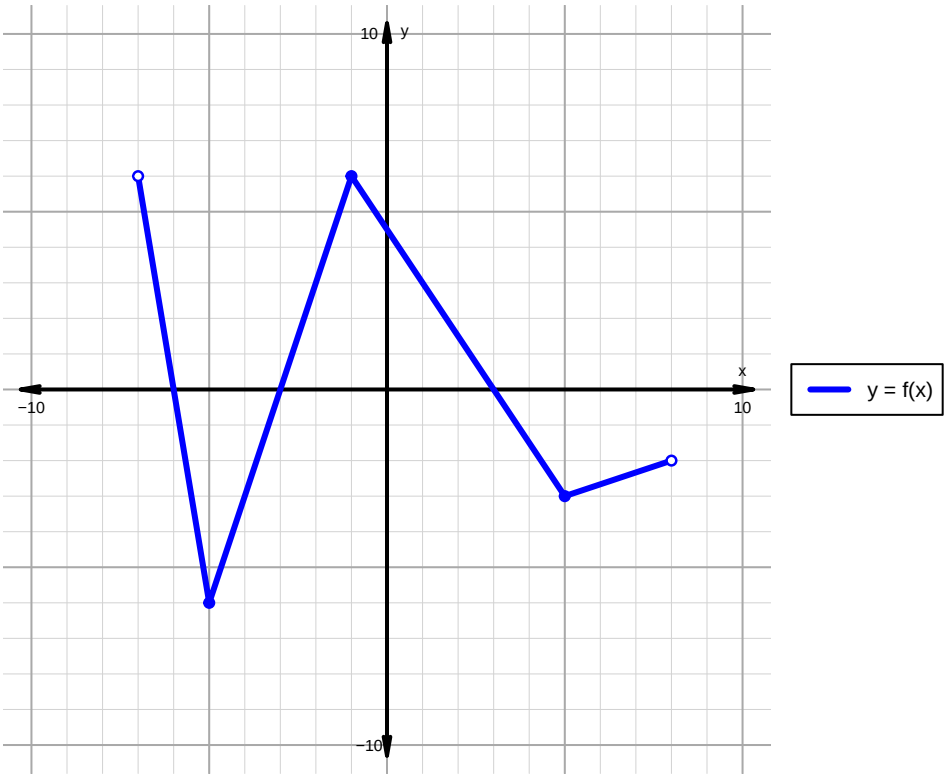
Name: Date:

Intervals, Transformations, and Slope Solution (version 102)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-7,-6) \cup (-3,3)$
Negative	$(-6,-3) \cup (3,8)$
Increasing	$(-5,-1) \cup (5,8)$
Decreasing	$(-7,-5) \cup (-1,5)$
Domain	$(-7,8)$
Range	$(-6,6)$

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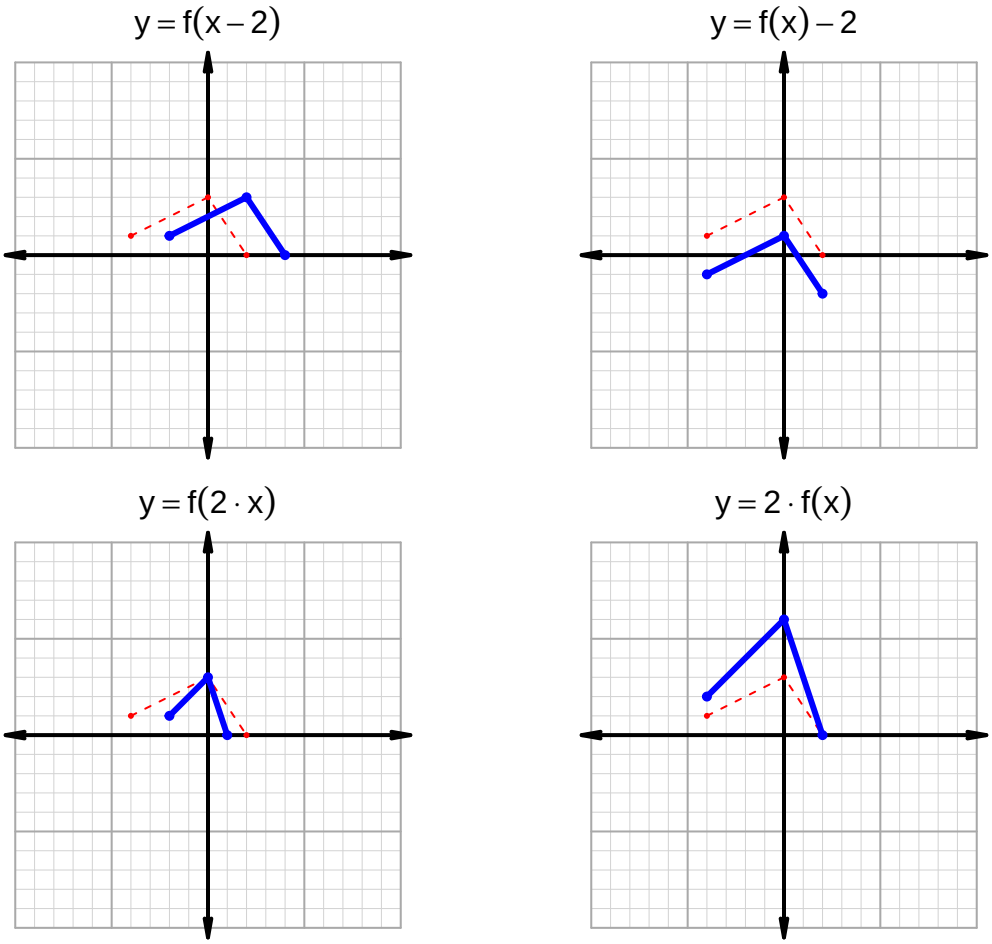
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 15$ and $x_2 = 55$. Express your answer as a reduced fraction.

x	$g(x)$
15	71
55	96
71	55
96	15

$\frac{f(55)-f(15)}{55-15} = \frac{96-71}{55-15} = \frac{25}{40}$

The greatest common factor of 25 and 40 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{5}{8}$$